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Reply to Office Action dated June 20, 2003

REMARKS

Claims 1-18 and new Claims 19 and 20 are active in the case. Reconsideration is respectfully requested.

Amendments to the Specification

The disclosure on pages 3, 4 and 5 has been amended so that it is clear that the formula of the organoalkoxysiloxanes permits a mixture of linear, cyclic and net-like organoalkoxysiloxanes. None of the amendments introduce new matter into the case because the effect of the amendment to the formula clearly permits the cyclic and net-like structures which are mentioned by the specification. (See also the discussion below concerning the amendments to the specification.)

Claim Amendments

Claim 1 has been amended particularly with respect to the formula of the organoalkoxysiloxanes such as to accommodate the disclosed fact that the organoalkoxysiloxanes of the invention are mixtures of linear, cyclic and/or net-like organoalkoxysiloxanes. The modified formula presented in amended Claim 1 is consistent with formula I as originally presented, but has been modified to make clear that cyclic and net-like organoalkoxysiloxanes are included in the mixtures. Moreover, the definitions of groups R-R" and n and m remain the same. Thus, no new matter is believed introduced into the claims by the amendments that have been made.

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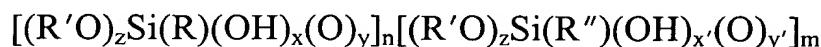
New Claims 19 and 20 are directed to embodiments of the invention as disclosed on page 7 of the specification. Minor amendments of form have been made to other claims. Accordingly, entry of the amendments and new claims is respectfully requested.

Claim Rejection, 35 USC 112

Applicants refer to the discussion above concerning the amendments to the claims where it is stated that the presentation of the amended formula clearly accommodates the fact that the invention embraces mixtures of linear, as well as cyclic and net-like organoalkoxysiloxanes. Accordingly, withdrawal of the rejection of the claims is respectfully requested.

Invention

The present invention is directed to a process of continuously manufacturing a mixture of organosiloxanes of formula I:



wherein R and R'' are identical or different and are methyl, ethyl, vinyl, n-propyl, i-propyl, γ -chloropropyl, n-butyl, t-butyl, n-pentyl, i-pentyl, n-hexyl, i-hexyl, n-heptyl, i-heptyl, n-octyl, i-octyl, hexadecyl, octadecyl or alkoxy, R' represents methyl or ethyl, n and m are identical or different and each is 0 or an integer ranging from 1 to 20, on the condition that $(n+m) \geq 2$, x and x' are 0 to <3, y and y' are >0 to 1.5, z and z' are 0 to <3, wherein x and x', y and y' and

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z and z' are the same or different, and $(x + 2y + z) = 3$ and $(x' + 2y' + z') = 3$, by reacting, in a first stage, the constituents of (i) an organotrichlorosilane or a mixture of organotrichlorosilanes, or a mixture of at least one organotrichlorosilane and tetrachlorosilane, (ii) water and (iii) alcohol, combined in a molar ratio (i):(ii):(iii) of 1 : (0.59 to 0.95) : (0.5 to 100), at a temperature of 0 to 150° C, which produces hydrogen chloride and a crude organoalkoxysiloxane as products which are removed from the system. Thereafter, the crude organoalkoxysiloxane product is proportionately transferred to a reaction distillation column of a subsequent second stage after an average dwell time of 0.5 to 180 minutes. Finally, reaction and distillation are conducted in the reaction distillation column in which volatile constituents are withdrawn from the top of the column and the organoalkoxysiloxane product is withdrawn as a bottom product, wherein the reaction-distillation column is operated at a bottom temperature of 50 to 200° C.

Prior Art Rejection, 35 USC 103

Claims 1-5, 7-10 and 15-18 stand rejected based on 35 USC 103(a) as obvious over Fischer et al, U. S. Patent 4,506,087. This ground of rejection is respectfully traversed.

It is clear from a consideration of the Fischer et al patent that the same simply discloses a method of manufacturing oligomeric alkoxysilanes by a very simple process of introducing a silane and optionally water in combination to the head of a reaction distillation column and an alcohol to the bottom of the column. Volatile reaction products including

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hydrogen chloride and alcohol are withdrawn from the top of the reactor and a crude organoalkoxysiloxane product is withdrawn from the bottom of the reactor. However, this is not the process as claimed in any of its embodiment of the present invention. Present Claim 1 requires that upon continuous reaction of silane starting material, water and alcohol in a first reaction distillation column, volatile hydrogen chloride is withdrawn from the reactor and crude organoalkoxysiloxane product is separately withdrawn from the reactor to a second stage reactor after a stated dwell time of 0.5 to 180 minutes. A reaction and distillation is then conducted in the second stage where an organoalkoxysiloxane product is withdrawn as a bottom product from the reactor where the temperature of the bottom material is held at 50 to 200°C. There is no teaching or suggestion of such a staged, continuous reaction and distillation process in the Fischer et al disclosure.

Applicants remain of the opinion that the molar ratio, temperature and time parameters of the present claims are not result effective variables, because these parameters have been developed and understood in terms of a staged continuous process as claimed. On the other hand, the process of Fischer et al is a single stage process of reacting an organosilane and an alcohol optionally with water which is a process that would **not** lead one of skill in the art to the several stage process of the invention. Since one of skill in the art would not be led to a plural stage process of producing an organoalkoxysiloxane, the skilled artisan would not foresee the time, temperature and molar ratio parameters of the present

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claims which define a plural stage reaction/separation system. Accordingly, the rejection is believed overcome and withdrawal of the same is respectfully requested.

As to new Claim 20, the same is believed allowable in view of the indication of allowable subject matter in the form of Claim 6.

Claims 11, 12 and 14 stand rejected based on 35 USC 103(a) as obvious over Fischer et al, U. S. Patent 4,506,087 in view of Brennan et al, U. S. Patent 3,668,180. This ground of rejection is respectfully traversed.

Applicants retain their position as stated with respect to the combination of Fischer et al and Brennan et al. The fact remains that neither reference teaches or suggests the product prepared by the staged procedure of the invention. Accordingly, since the references fail to teach the product produced by the present process, the art could not and does not teach or suggest to one of skill the application of the unknown product to organic or inorganic surfaces or the use of the product in the preparation of a coating or paint formulation. Accordingly, withdrawal of the rejection is respectfully requested.

Claim 13 stands rejected based on 35 USC 103(a) as obvious over Fischer et al, U. S. Patent 4,506,087 in view of Standke et al, U. S. Patent 5,679,147. This ground of rejection is respectfully traversed.

Applicants maintain that the combination of Fischer et al and Standke et al also does not teach or suggest the method of Claim 13 for reasons similar to those above. That is, although the Standke et al teaches that the organopolysiloxane of the reference is useful in

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improving the rheological properties of a dispersion or emulsion, the fact remains that the reference does not teach or suggest the product produced by the present process. Thus, the reference does not lead the skilled artisan to the particular use disclosed therein involving an organoalkoxysiloxane material that is unknown to him. Moreover, since the Fischer et al patent fails to teach the present process, it does not teach or suggest the product produced by the present process. Accordingly, the combination of references does not suggest the invention and withdrawal of the rejection is respectfully requested.

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Applicants believe that the application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Registration No. 24,618

Frederick D. Vastine, Ph.D.
Registration No. 27,013

Customer Number

22850

(703) 413-3000
Fax #: (703)413-2220
FDV